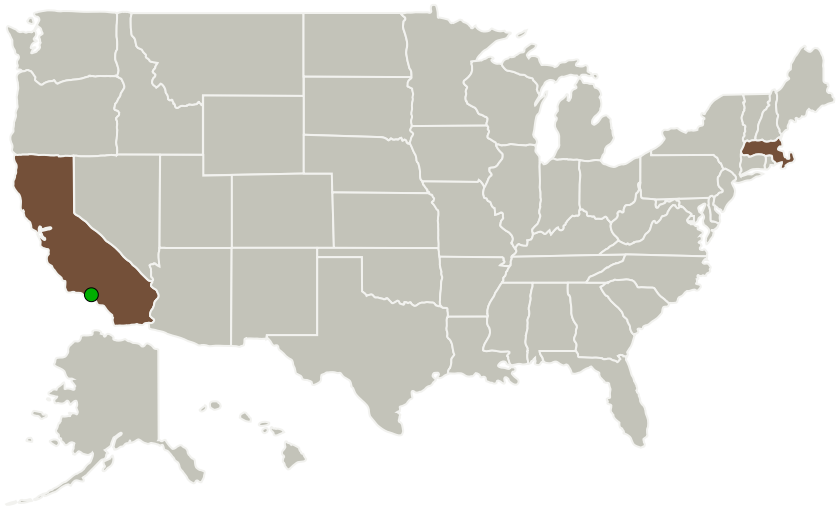
Precision Electrospray Thruster Assembly (PETA), Phase II

Completed Technology Project (2012 - 2015)

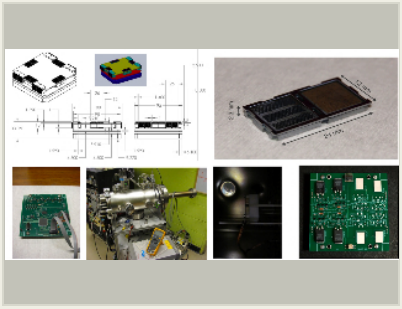
Project Introduction

New low cost, low volume, low power, rugged electrospray thrusters will be ideal as actuators for precision thrusting, if provided with precision high voltage power supplies. The small thrusters show minimum thrusts of 1.2 nanoNewton, and thrusts scalable in a wide range to hundreds of microNewtons, with an ISp of 3500 sec. We propose to develop and test a high-precision high-voltage power supply optimized for fine control of the thrusters, and designed to support accurate formation flying of space telescope elements, and precision alignment and stabilization of space platforms. The HV supply design will be developed into a cubesat format Precision Electrospray Thruster Assembly including thrusters, and ready for flight tests of the technology. At the end of Phase II PETA units will be provided as protoflight avionics to be flown, tested and qualified.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Espace Inc.	Lead Organization	Industry	Hull, Massachusetts
Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California



Precision Electrospray Thruster Assembly (PETA) Project Image

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Primary U.S. Work Locations	
California	Massachusetts

Project Transitions

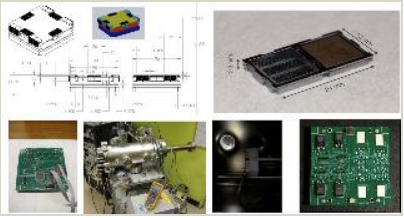
April 2012: Project Start

March 2015: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137373)*

Images



Project Image
Precision Electrospray Thruster Assembly (PETA) Project Image *(https://techport.nasa.gov/image/128424)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Espace Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

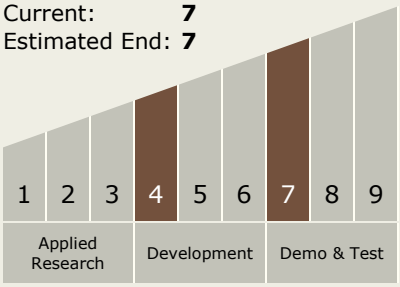
Carlos Torrez

Principal Investigator:

Francois H Martel

Technology Maturity (TRL)

Start: **4**
Current: **7**
Estimated End: **7**



Precision Electrospray Thruster Assembly (PETA), Phase II

Completed Technology Project (2012 - 2015)

Technology Areas

Primary:

- TX01 Propulsion Systems
  - TX01.2 Electric Space Propulsion
    - TX01.2.2 Electrostatic

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System